

#BeatPollution



TRANSFORMING THE TEXTILE INDUSTRY

# Tackling Chemical Pollution

## The problem

The World Health Organization estimates that **two million lives were lost in 2019** due to exposure to chemicals, yet the global chemicals industry is expected to **double by 2030**. The textiles sector uses large amounts of chemicals, from raw material production all the way to the final stages of a product's life.

The cultivation of cotton, for example, uses 3% **of the world's arable land**, yet accounts for 5% of all pesticides (measured by total pesticide sales) and 10% of insecticides.

During fashion and textile manufacturing, **more than 15,000 chemicals** can be used, including in detergents, dyes, flame retardants, stain repellents and softeners. Some of these chemicals, such as azo dyes (used largely for their low-cost colouring effects), PFAS (used for water, oil and stain repellence) and chlorinated paraffins (used as flame retardants or for flexibility and durability), can accumulate in the environment for decades, also causing impacts to human and animal health. The common use of chemicals across multiple types of fibres is an area where major change in the industry is needed.

## Did you know?

The textile sector can use more than

**15,000 chemicals**

during manufacturing.

## What is InTex?



The InTex programme, part of the **UNEP Textile Initiative**, works with governments and SMEs in countries where textiles are a key economic driver, encouraging a shift from a linear take, make and dispose process to a more sustainable, circular model. The programme does this by supporting national-level policy changes that enable a shift towards circularity. It also helps companies understand the impact of the resources they are using, spurring them to optimize production processes, reduce environmental harms and change the way they do business. This gives businesses a competitive edge.

**The textile industry is a cornerstone of Tunisia's economy, representing the largest source of industrial employment (30%), providing stability and contributing significantly to the country's socio-economic balance.** Around 80% of textile companies produce exclusively for export, underscoring the industry's strong integration into global value chains. Yet, this is an industry with a big environmental footprint, from its use of land and water to the emissions it generates, as well as its impacts on human health. But positive change is happening, and there is a lot of opportunity for real impact.

## By the numbers

To date in Kenya, South Africa and Tunisia



**32 SMEs**

applied UNEP's eco-innovation methodology



**10 LCAs**

conducted following the Product Environmental Footprint (PEF) method



**230 company representatives**

trained in LCA and circularity concepts



**5,100 tonnes GHG**

emissions savings estimated in Tunisia and South Africa



**10% hazardous chemicals**

reduction estimated in Tunisia



**25% waste**

reduction on average



**USD 4 million**

estimated savings

*The environmental and financial impacts are annual estimates, assuming full implementation of the measures identified through InTex.*

## What SMEs can do

The Life Cycle Assessments (LCAs) carried out by SMEs with UNEP InTex support measure the environmental performance of a textile product from raw material extraction to disposal or recycling, with companies following the European Union [Apparel and Footwear Product Category Rules](#) (PEFCR) to conduct the assessments. When chemical pollution emerges as a hotspot, meaning an area of high environmental impact and thus where improvements are needed, a company can implement various strategies including shifting to natural dyes, using low-impact or waterless dyeing technologies, substituting hazardous chemicals with safer alternatives or opting for inputs that meet environmental and safety standards.

For example, if an SME finds that a certain chemical they are using is classified as hazardous, they could phase it out and, **guided by a comprehensive LCA** to avoid regrettable substitutions, explore whether there are **feasible greener or non-chemical alternatives** that could serve as replacements. For instance, if the objective is to replace a flame-retardant chemical, options may include substituting for textiles with smolder-resistant properties such as wool and leather. Or, PFAS could be substituted with a combination of wax-based alternatives and dense fabrics to achieve water and stain repellence.



Digitally printed GDR denim

## Did you know?

Did you know? Based on LCA fundings, UNEP InTex helps SME lower their environmental impacts, through various strategies including shifting to natural dyes, using low-impact or waterless dyeing technologies, substituting hazardous chemicals with safer alternatives or opting for inputs that meet environmental and safety standards.

## Case study



If we want to expand our markets, we need to invest in sustainability, which importantly includes addressing our use of chemicals.

*Bilel Ben Miled, Head of Sustainability at GDR and parent company Gonser Group.*

These Life Cycle Assessments are so helpful in clearly showing a business how they can substantially reduce their environmental impacts, including the use of chemicals that harm the environment, without impacting the bottom line.

*Nawel Mejri, Director, International Center for Environmental Technologies of Tunis (CITET), InTex Implementing Partner in Tunisia*

### Tunisian denim company introduces innovations to address chemical pollution

Tunisia's **Gonser Denim Revolution (GDR)** is a textile company that specializes in denim manufacturing, and is a major supplier to European brands. With InTex help, the business analyzed the Product Environmental Footprint (PEF) of its denim, and is introducing innovations in chemicals management as part of a broader sustainability push. Now, more than 90% of the chemicals the firm uses meet an **environmental standard** developed for apparel makers. And GDR is introducing an innovation to automatically rather than manually add those chemicals, including dyes, to batches of jeans. This could cut the factory's chemical use by 25%. By reducing its use of chemicals, the company expects **savings of USD 5,000 a year**.

## How SMEs benefit

The SMEs that work with the InTex programme receive **training and technical support** to calculate their Product Environmental Footprint (PEF) and innovate their business strategy. Through this process, SMEs expand their understanding of chemicals and other environmental impacts, and learn which sound chemical management strategies to apply, usually with positive impacts also on their balance sheets.

InTex assists companies in **shifting their mindset, helping to forge new strategic partnerships and enabling systemic change** through concrete solutions for participating SMEs and, by extension, the sector overall. SMEs also benefit from exposure to international networking and expertise, learning from the latest developments in circularity and sustainability. The programme results show the real-world potential of low-cost sustainability measures in textiles — proving that environmental action and business profitability can go hand in hand.

**UNEP's InTex programme**, funded by the European Union and the Government of Denmark, works with governments and textile SMEs to reduce the environmental impact of textile products and the way companies do business, using life-cycle approaches.